



NUTRIPLANT SG

What is Nutriplant SG?

Q xwuls @lqw#VG

+

GRAPHITE

Fermentation Metabolites

Proteins, peptides, amino acids, carboxylic acids, carbohydrates

Naturally Chelated Micronutrients

Iron, manganese, zinc, copper, molybdenum, cobalt

Plant Extracts

Amino acids, carbohydrates, phenolic compounds, betaines, trace minerals



Let's dive deeper. What is in Nutriplant SG?

NUTRIPLANT[®] SG

Nutritional Supplement for Agricultural Crops
to Aid Seedling Emergence and Vigor

F1380

Guaranteed Analysis

Calcium (Ca)	4.0%
Sulfur (S)	5.0%
5.0% Combined Sulfur (S)	
Cobalt (Co)	0.070%
Copper (Cu)	0.090%
0.090% Water Soluble Copper (Cu)	
Iron (Fe)	1.0%
1.0% Water Soluble Iron (Fe)	
Manganese (Mn)	0.70%
0.70% Water Soluble Manganese (Mn)	
Molybdenum (Mo)	0.080%
Zinc (Zn)	2.0%
2.0% Water Soluble Zinc (Zn)	

Derived from Calcium Sulfate, Cobalt Sulfate, Copper Sulfate, Ferrous Sulfate, Manganese Sulfate, Sodium Molybdate and Zinc Sulfate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENTS:

28% Talc (Seed Lubricant)
7% Graphite (Seed Lubricant)
Talc to Graphite in a 80/20 Ratio

APPLICATION:

Apply NUTRIPLANT[®] SG to the seeds before planting. Application should be made in such a way that all seeds are thoroughly coated. Fill seed hopper box half full of seeds, apply half of the recommended dosage of NUTRIPLANT[®] SG and stir completely. Fill the hopper box with the remaining seeds, spread the other half of the recommended dosage of NUTRIPLANT[®] SG on top of the seeds and stir again. Keep seeds dry until planting.

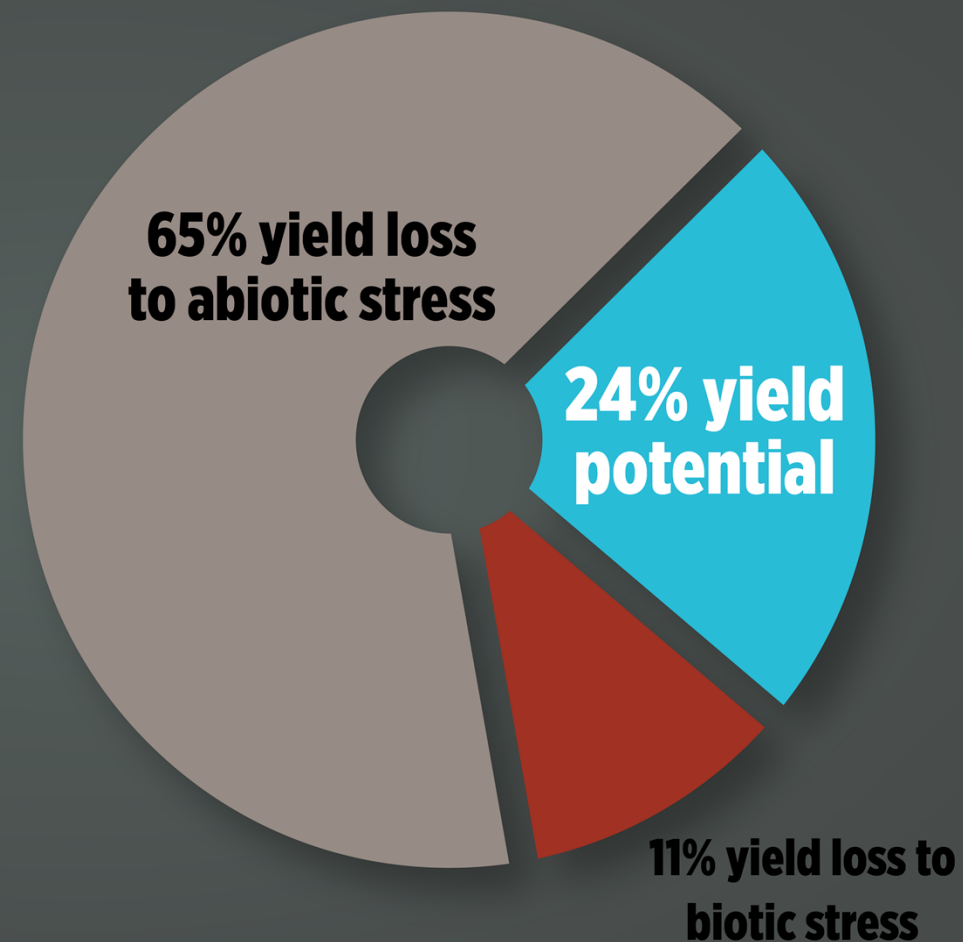
RECOMMENDED NUTRIPLANT[®] SG APPLICATION RATES:

CROP	APPLICATION RATES	
	oz per 100 lb seeds	kg/100 kg seeds
Alfalfa	4	0.25
Barley, oats, rye	4	0.25
Corn	8	0.50
Cotton	12	0.75
Milo, millets, sorghum	10	0.625
Peanuts	4	0.25
Rice	4	0.25
Soybeans	4	0.25
Sugar beets	8	0.50
Sunflowers	4	0.25
Wheat	4	0.25

For crops not listed, consult your dealer/distributor.

abiotic stress

Crops only
produce
24%
yield potential
when exposed
to stressors

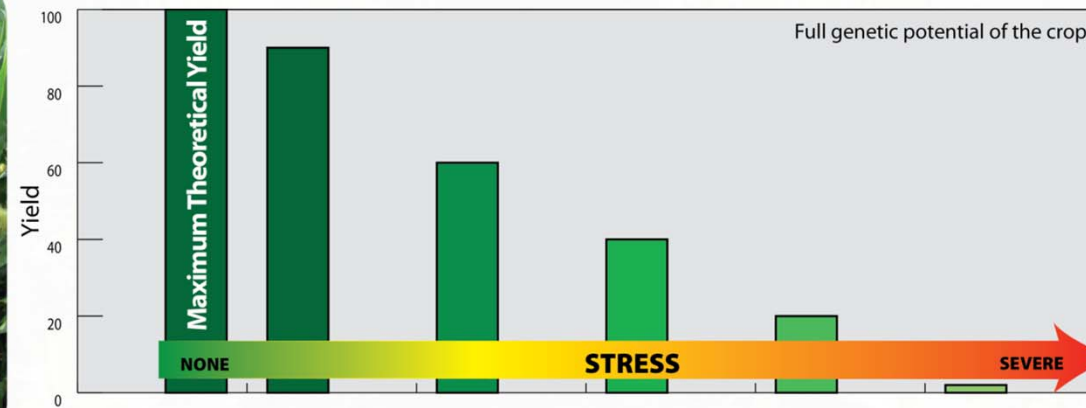
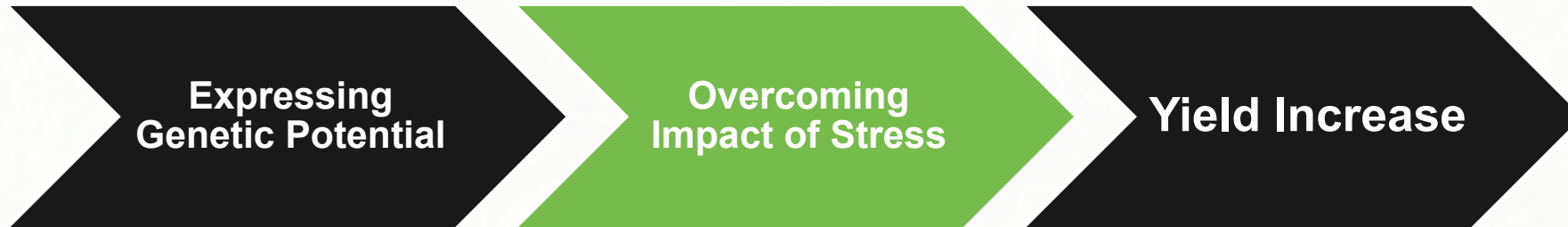


Source: Bray, Bailey-Serres and Weretilnyk. 2000. Responses to abiotic stresses.
In: W Gruissem, B. Biology of Plants. American Society of Plant Physiologists, Rockville, MD, pp 1158–1249.

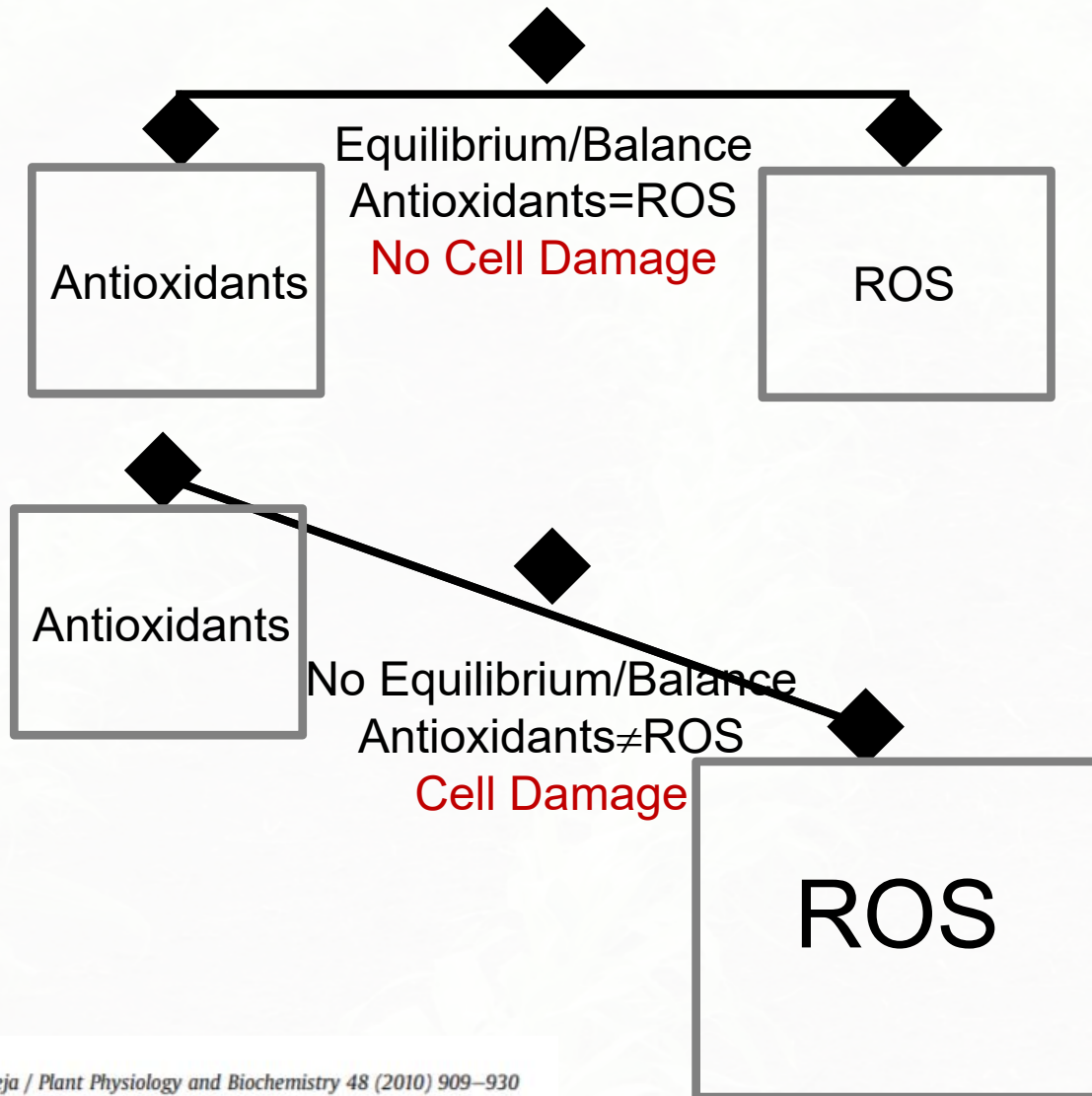


Can we overcome abiotic stress and protect yield potential?

Stress during critical stages of crop development causes significant yield loss



Antioxidants can Prevent Damage Caused by ROS by Scavenging/Neutralizing ROS



Little abiotic stress

- Antioxidants are 'in balance' with ROS - antioxidant level is high enough to scavenge/neutralize ROS
- Cell damage is prevented

Moderate/severe abiotic stress

- Antioxidants are NOT 'in balance' with ROS (antioxidant level NOT high enough to scavenge/neutralize ROS)
- Cell damage can occur

Other than the nutrients, how does it benefit the crop?

Modes of action

Details

1

High antioxidant activity

- Nutriplant SG has +7 times higher antioxidant activity than leading competitor products

2

Influences 1,164 genes involved in key plant metabolic processes

- Increases energy & carb supply to whole seedling *[53 genes influenced]*
- Protects seedling from reactive oxygen stress *[713 genes influenced]*
- Strengthens cell membranes *[145 genes influenced]*
- Strengthens cell walls *[253 genes influenced]*

Now easily applied as a talc/graphite replacement – a product growers use today!

Mode-of-action #2: Influencing gene expression in plants

How MAC Influences Gene Activity

Altered gene expression for 1,164 genes involved in key plant metabolic processes

Photosynthesis processes:
has 33 genes with Influenced expression



Chloroplast organization:
has 20 genes with increased expression



Other molecular function / cellular component / biological processes
– total of 58 (3%) of 1,980 genes enriched in shoots & roots



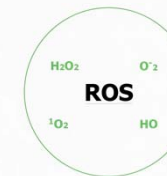
Carbohydrate metabolism:
a total of 253 genes influenced in shoots & root



Lipid metabolic process:
a total of 145 genes influenced in roots & shoots



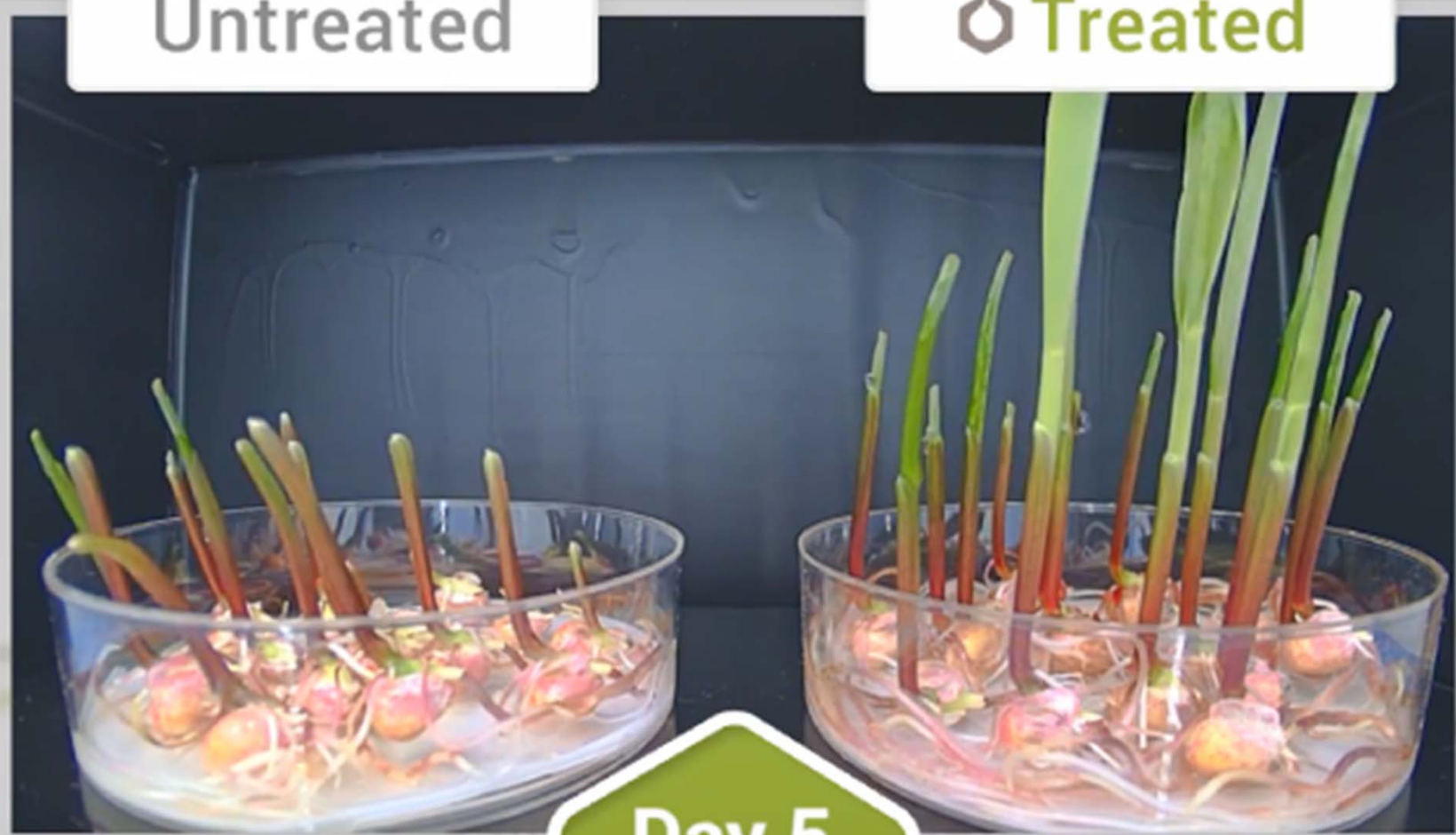
Oxidation-reduction:
a total of 713 genes influenced, of which 183 (26%) in shoots and 530 (74%) in roots



Does it help with emergence?

Untreated

 Treated



Day 5

Does it help with emergence?

Untreated

 Treated



Does it help with germination?

Corn Planted 5/3, Sunday, Received 2.9 in rain that night and next day

Nutriplant SG

Talc

Picture taken 5/8



Does it help with germination?

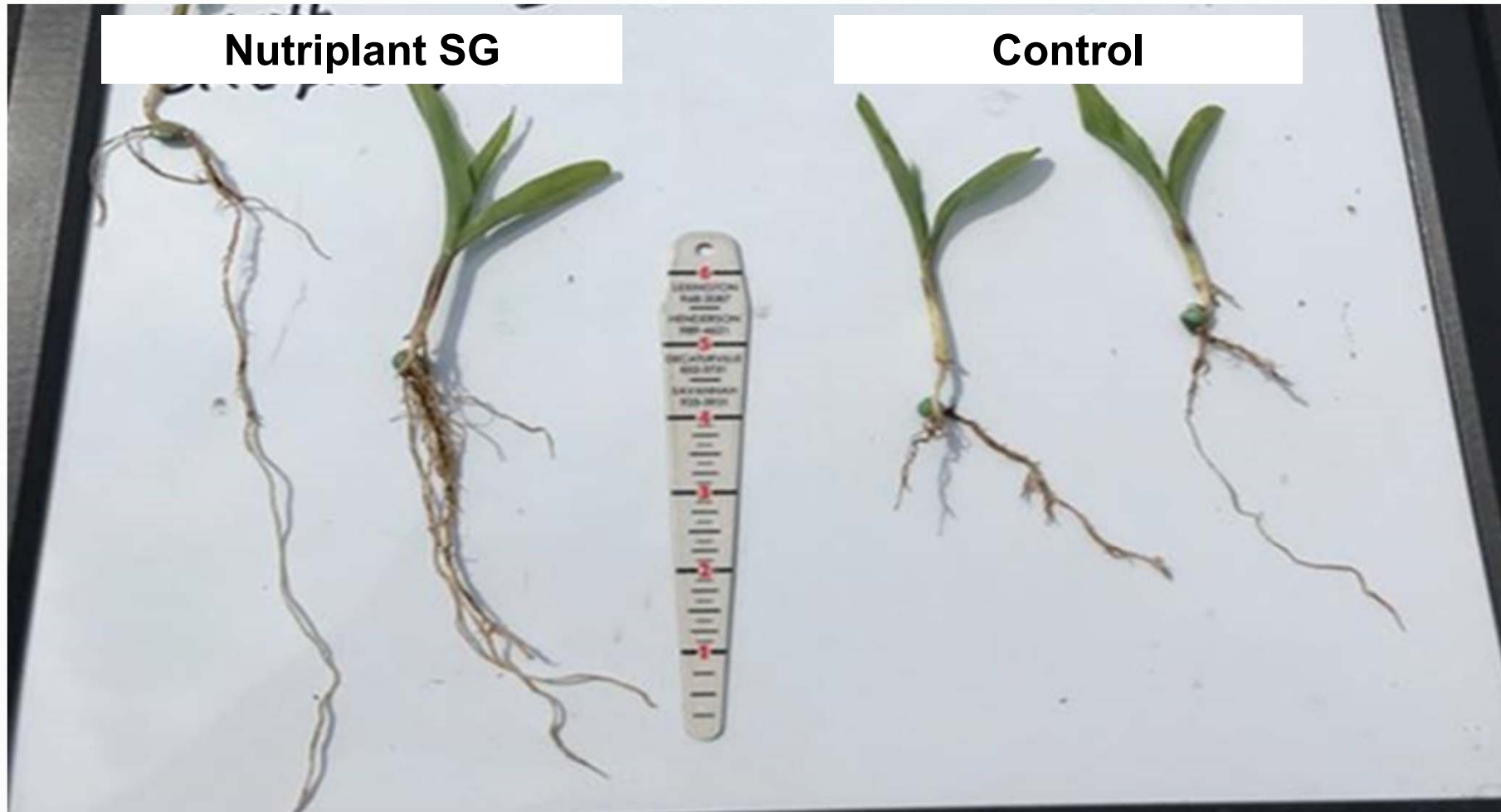


April 9th, 2020
Nutriplant SG
36 Hours after planting
West TN

Does it help with emergence?



Does it help with emergence & root growth?

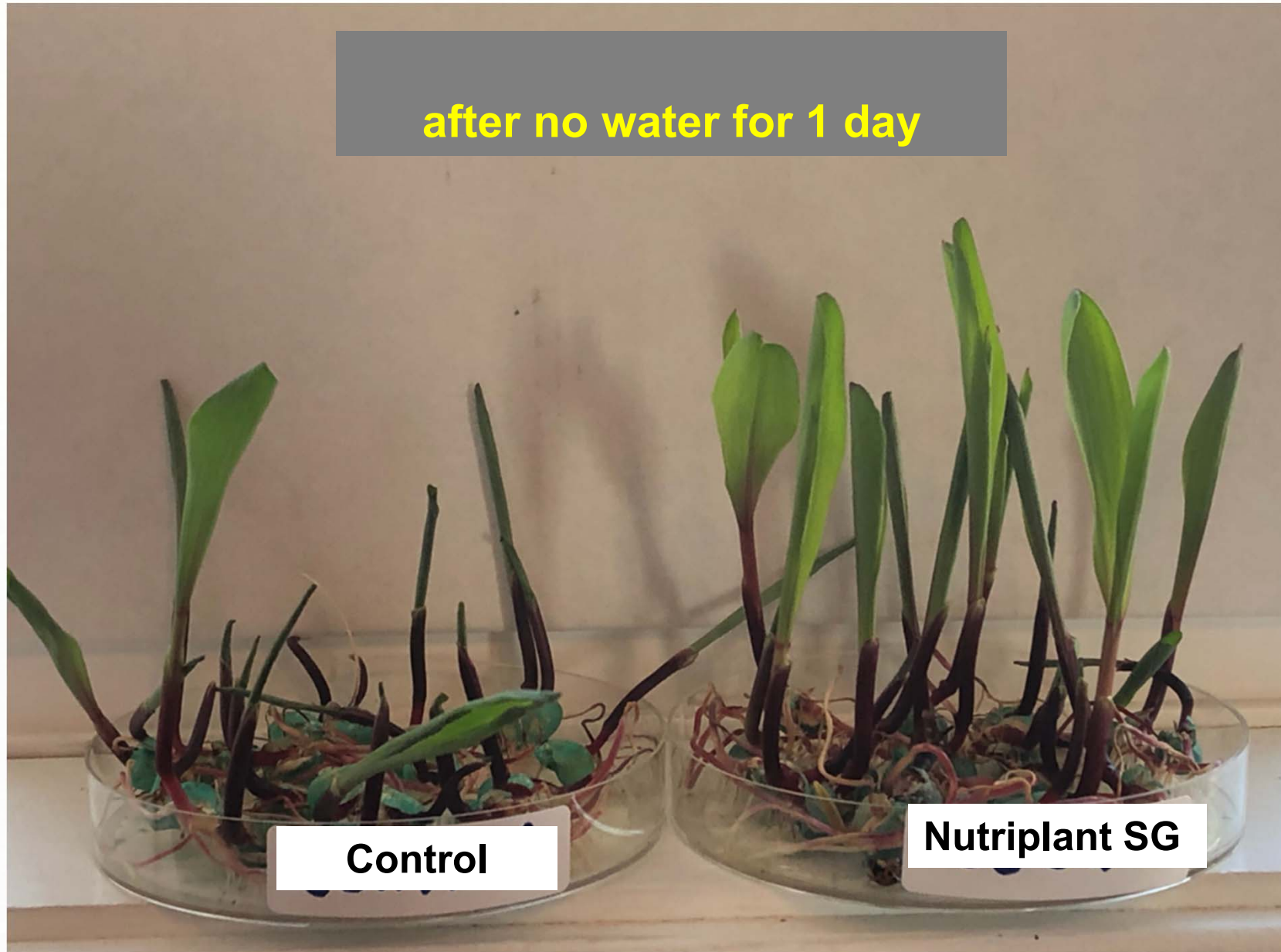


Does it beat competitive products in emergence?

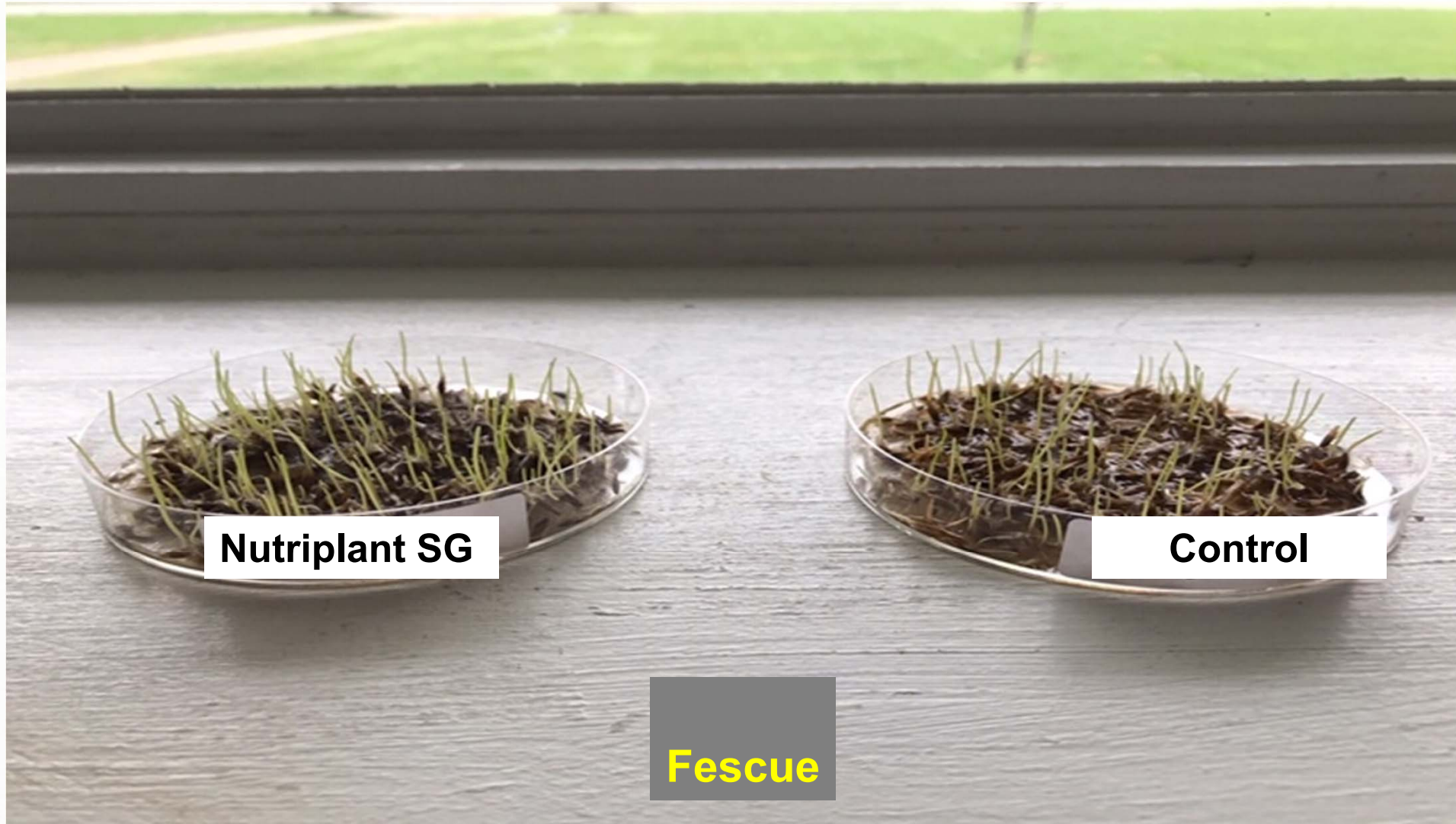


Does it help overcome stress during emergence?

after no water for 1 day



Does it help on numerous crops/plants/grasses? Yes.

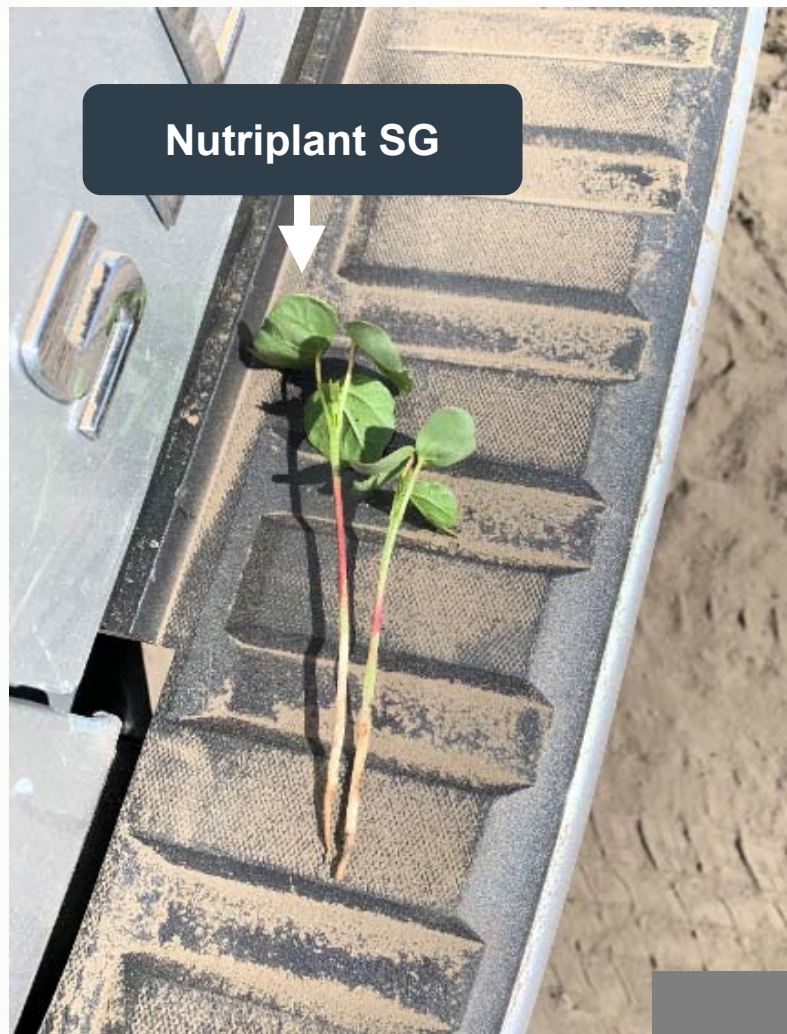


Nutriplant SG

Control

Fescue

Does it help on numerous crops/plants/grasses? Yes.

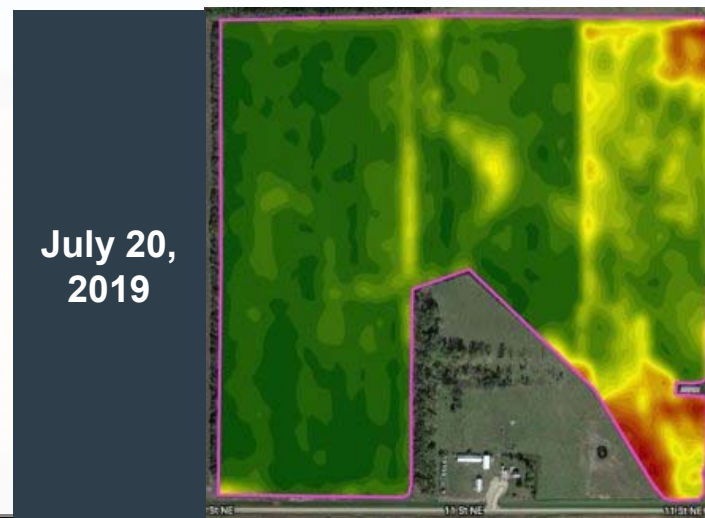
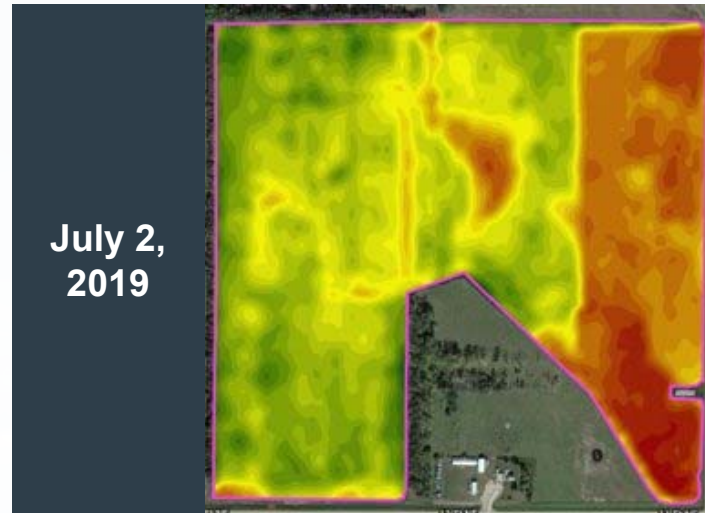
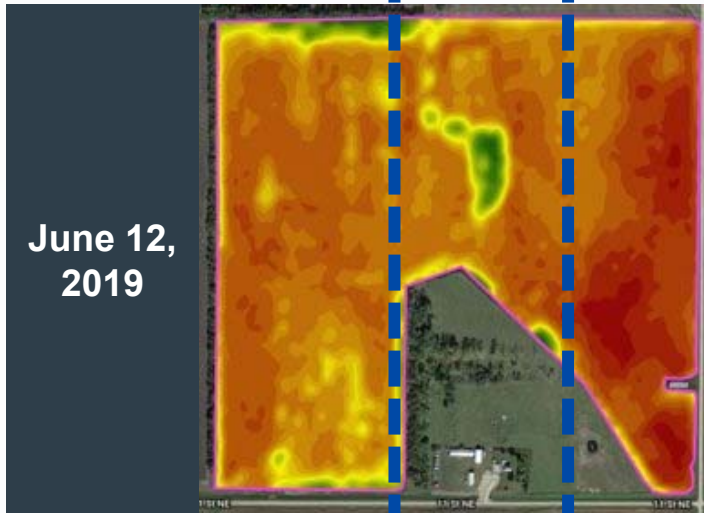


Cotton

Does it help with in-season plant health?

SOYBEANS: Biomass satellite imagery from 2019 Midwest farm trial, strong indication of plant health

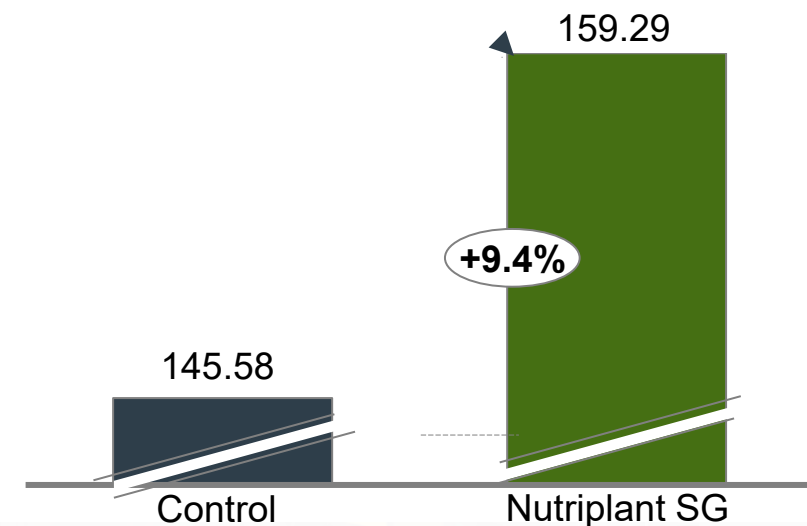
Nutriplant SG & MAC | MAC | Un-treated



Will it increase yield?

Nutriplant SG used in place of 80/20 talc/graphite lubricant through Kinze planter

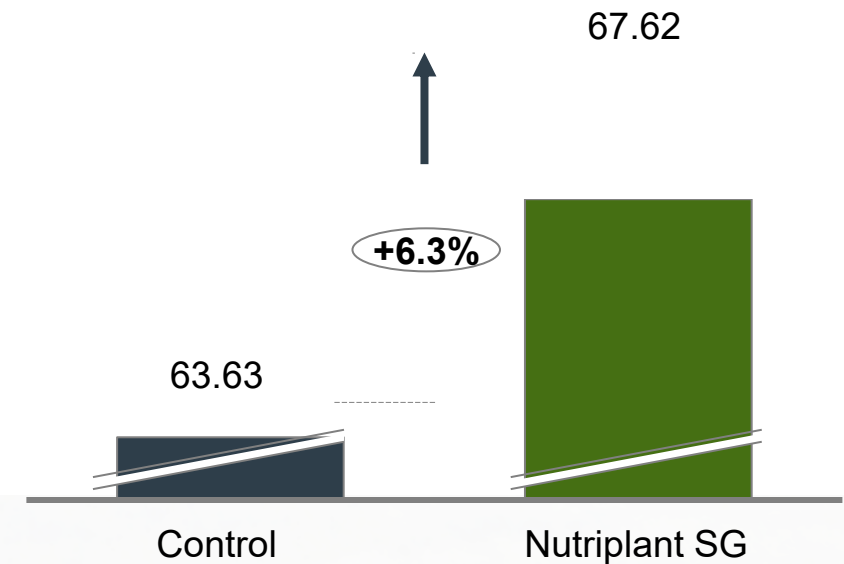
Trial: Cytozyme										
Location: Garden City, MO										
Managed By: Renegade Research LLC										
Plot Area Size: 4 Acres										
Crop: Corn										
Trial Ref. #	# of Reps	Trial	Rate	Timing	Seed Variety	Base Seed Treatment	Planting Date	Harvest Date	Moisture	Test Bu./Ac.
3	8	Check	Standard Grower Control		MP3145	Cruiser Maxx	5/17/2019	10/17/2019	16.88	145.58
6	4	Nutriplant SG	8 oz./100 lbs. of seed	At planting	MP3145	Cruiser Maxx	5/17/2019	10/17/2019	16.28	159.29
Constant Variables										
Row Width			30 in.							
Tillage			Disked, Field Cultivated							
# of Rows			3							
Soil Type			Kenoma Silt Loam, 1% to 3% Slopes							
Trial Length			120 ft / entry							
Herbicide (Pre-Emerge)			Degree Xtra, Atrazine, AMS, MSO, Impact							
Nitrogen (Pre-plant)			2 tons/ acre of Organic Fertilizer (Chicken Litter)							
Nitrogen (At-planting)			None							
Nitrogen (Post - planting)			1 application of 30 gallons of 29.6-0-0-3							
Irrigation			None							



Will it increase yield?

Managed By: Renegade Research LLC										
Plot Area Size: 4 Acres			<i>Nutriplant SG used in place of 80/20 talc/graphite lubricant through Kinze planter</i>							
Crop: Soybeans										
Trial Ref. #	# of Reps	Trial	Rate	Timing	Seed Variety	Planting Date	Harvest Date	Moisture	Test Bu./Ac.	
40	4	Nutriplant	4 oz./100 lbs. of Seed	At Planting	WXNC9447	5/17/2019	10/17/2019	16.48	67.62	
41	4	SG	Standard Grower Control		WXNC9447	5/17/2019	10/17/2019	14.73	63.63	

Constant Variables	
Target Seed Population	150,000
Row Width	30 in.
# of Rows	3
Soil Type	Haig Silt Loam, 0% to 2% Slopes
Tial Length	120 ft / entry
Tillage	Disked, Field Cultivated, Row Cultivated
Herbicide (Pre-Emerge)	Authority, MSO, Clethodim, AMS
Fertilizer (Pre-plant)	tons/ acre of Organic Fertilizer (Chicken Litter)



Are you confident it works in the planter? Yes.

The image shows a close-up of a John Deere planter's control panel. At the top, the 'JOHN DEERE' logo is visible. Below it, there are two main sections: 'Customer Settings' and 'Stand Settings'. The 'Customer Settings' section includes fields for Row (3), Name, Model, and Seed. The 'Stand Settings' section includes fields for Row (1), Target Population (32000 sds/ac), Target Row Speed (5.6 mph), Number of seeds (2000 seeds), and Row Spacing (30.0 in). Below these settings is a performance table with columns for 'Target' and 'Actual'. The table lists various metrics such as Population, Distance, Average Seed Spacing, Seed Count, Seed Singulation, Seed Skips, Seed Multiples, and CV. At the bottom of the panel, there are additional metrics for Meter Speed (avg) and Meter Speed (max).

	Target	Actual	
Population	32000	31800	sds/ac
Distance	1089.2	1089.9	ft
Average Seed Spacing	6.5	6.5	in
Seed Count	2000	1990	seeds
Seed Singulation		100.0	%
Seed Skips		0.0	% (0 seeds)
Seed Multiples		0.0	% (0 seeds)
CV		0.09	
Meter Speed (avg)	12.5	0.0	
Meter Speed (max)	22.3	22.5	

- Trial completed by John Deere dealership in Midwest
- Seed was pre-treated with Nutriplant SG per labeled guidelines
- No other talc/graphite was used

99.4% seeds/acre versus target

100% seed singulation

**0 Seed skips
0 seed multiples**

Is it available now and profitable?

SKUs
available

- 25lb hard buckets (pallet includes 48 buckets)

Application rates

RECOMMENDED NUTRIPLANT® SG APPLICATION RATES:

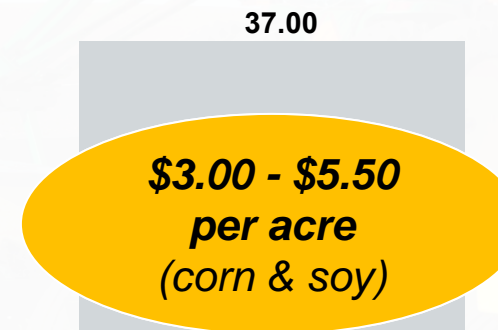
CROP	APPLICATION RATES	
	oz per 100 lb seeds	kg/100 kg seeds
Alfalfa	4	0.25
Barley, oats, rye	4	0.25
Corn	8	0.50
Cotton	12	0.75
Milo, millets, sorghum	10	0.625
Peanuts	4	0.25
Rice	4	0.25
Soybeans	4	0.25
Sugar beets	8	0.50
Sunflowers	4	0.25
Wheat	4	0.25

For crops not listed, consult your dealer/distributor.

Pricing

Suggested grower pricing & ROI

Dollars per pound



- **Growers can realize a 8x+ ROI, net of typical talc/graphite costs**
- *~\$1.90 to \$2.00 per acre on cotton*

Packaging



NUTRIPLANT® SG
 Nutritional Supplement for Agricultural Crops
 to Aid Seeding Emergence and Vigor

Component	Analysis
Calcium (Ca)	4.0%
Sulfur (S)	5.0%
3.5% Combined Sulfur (S)	3.50%
Cobalt (Co)	0.002%
0.50% Water Soluble Copper (Cu)	0.50%
Iron (Fe)	1.0%
1.0% Water Soluble Zinc (Zn)	1.00%
Manganese (Mn)	0.75%
0.75% Water Soluble Manganese (Mn)	0.75%
Zinc (Zn)	2.00%
2.0% Water Soluble Zinc (Zn)	2.00%

603479
 Net Weight 25 lb/11.3 kg

25 lb bucket

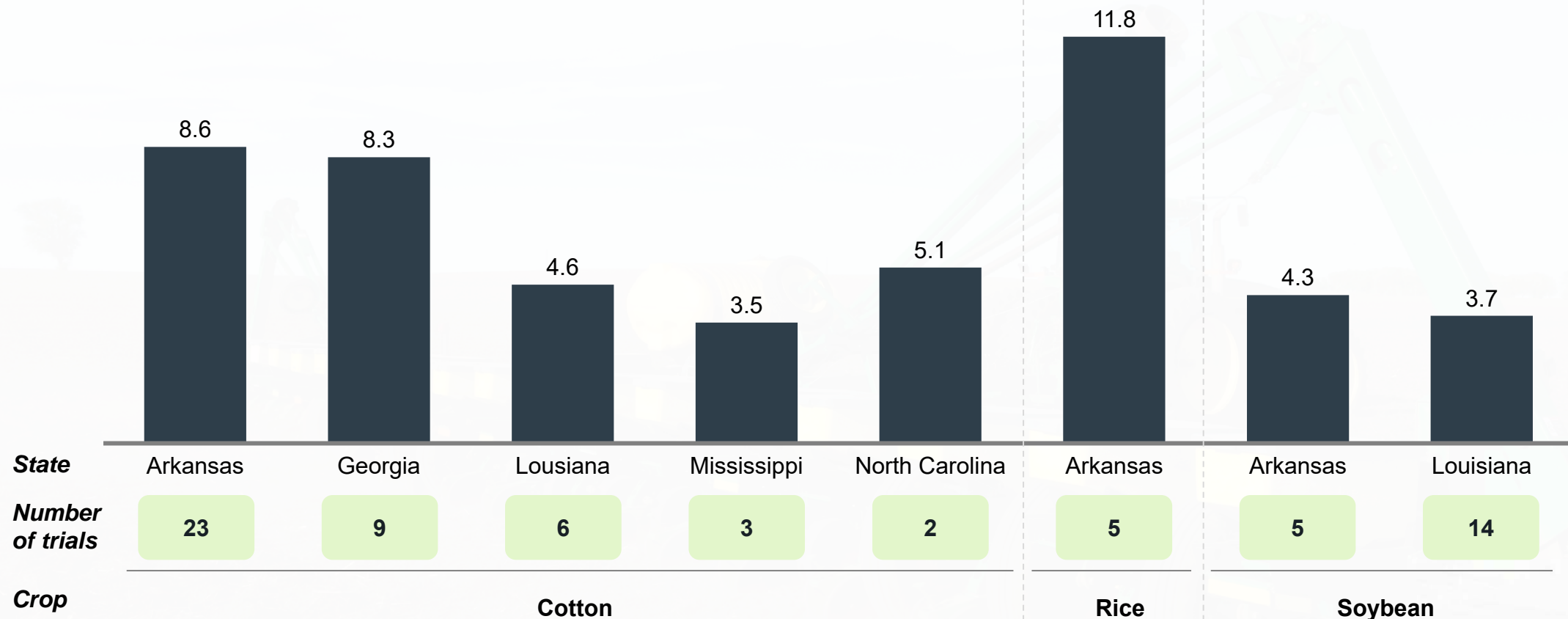


Cytozyme/Nutriplant technologies: 67 trials conducted across the U.S. Southeast have consistently resulted in yield increases on cotton, rice, and soybeans

Average yield increase by crop and geography

■ Average yield increase

Percentage increase vs. control



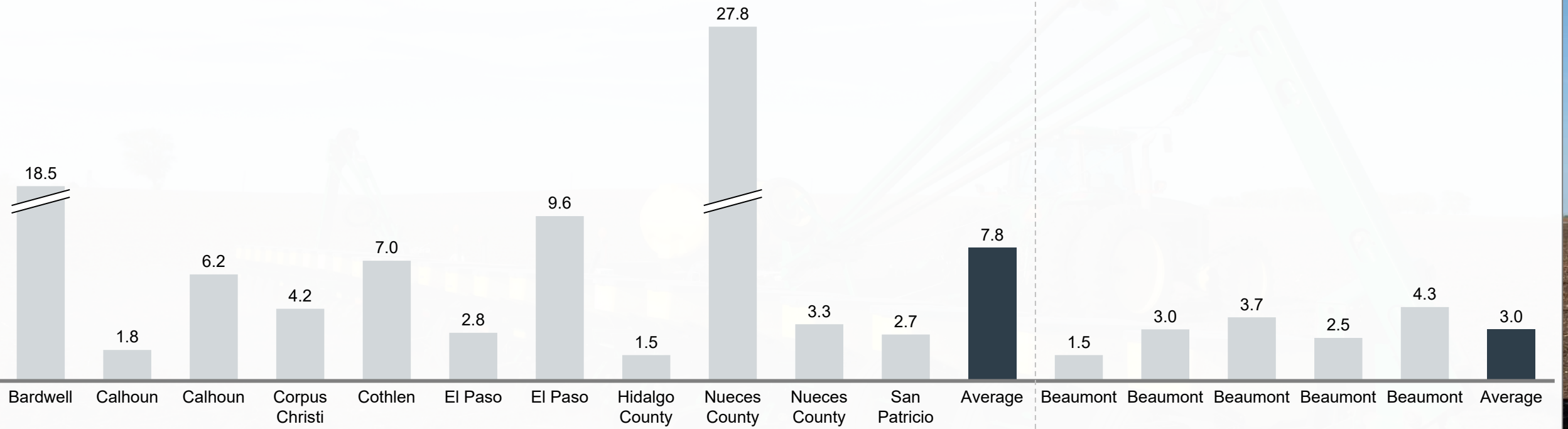
- All trials used Cytozyme Seed and Foliar Treatments
- Yield increases calculated versus control with grower standard practice

Cytozyme technologies: Texas trials averaged 7.8% yield increase on cotton, and 3.0% yield increase on rice

Yield increase versus by crop and Texas region

Percentage increase vs. control

Yield increase per trial
 Average yield increase by crop



Cotton

Rice

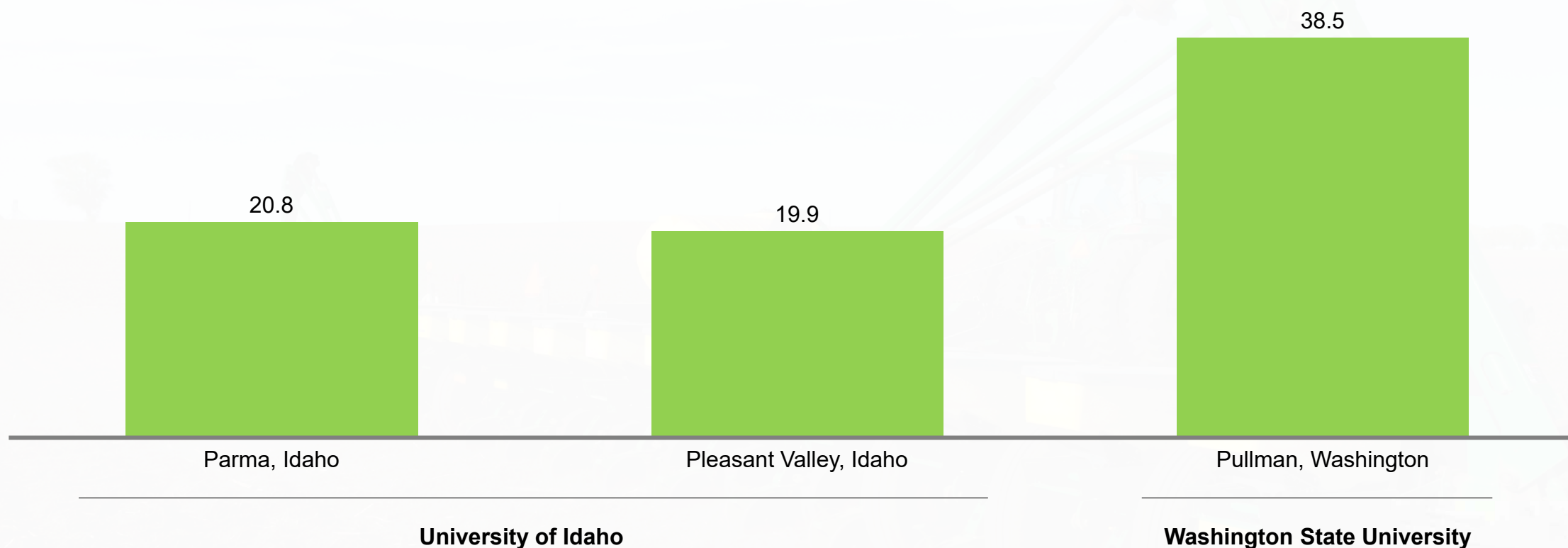


Cytozyme technologies: Potato trials averaged 26% yield increase in University trials using Nutriplant SD

Potato yield increase versus grower standard practice

Yield increase

Percentage increase vs. control



Application Options



The logo for Amway Agriculture is centered in a white rectangular box. It features the word "Amway" in a dark grey, sans-serif font with a thin grey underline. To the right of "Amway" is a stylized green leaf icon with a small "TM" trademark symbol. Below "Amway" is the word "Agriculture" in a bold, green, sans-serif font.

Amway  TM
Agriculture